

Work Order ID 76388

November-11-11 12:42:18 PM

76388

U/R

Page 1

Item ID: D3391-021 Accept *N9000040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Fwd Tube Assembly
 Start Date: 11/11/2011 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 25/11/2011 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: M.C.J. Date: 11/11/14 Tooling: Date: Run Start *NR1*
 QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3391	Rev H U/R OK 11/11/14								
100		0.00							
100	Skidtubes								
Skidtubes	Memo	0.00							
Skidtubes	Cut extrusion to 46.52 +0.010 -0.020								
110		0.00							
110	BENDING MACHINE - SKIDTUBES								
CNC Bend 1	Memo	0.00							
CNC Delta 100 Bender	Bend as per Dwg D3391 Using Bend Prog 3391021								
120		0.00							
120	QC5- Inspect part completeness to step on W/O								
QC	Memo	0.00							
Quality Control									

DP 11-11-15

DP 11-11-15

1 X BE11-11-15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 76388

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Item ID: D3391-021 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Fwd Tube Assembly
 Start Date: 11/11/2011 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 25/11/2011 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* HAAS I HAAS CNC vertical machine #1	HAAS CNC VERTICAL MACHINING #1 Memo 1-Machine as per Folio FA590 Rev. <u>AA</u> & Dwg D3391 Rev. <u>I</u> Identify as D3391-1 2-Deburr	0.00 0.00	<i>SC/SA</i>	<i>u/l/18</i>		<i>1</i>	<i>0</i>		
140 *140* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.00	<i>SC/SA</i>	<i>u/l/18</i>		<i>1</i>	<i>0</i>		
150 *150* Mill Conv Conventional Milling Machine	CONVENTIONAL MILLING MACHINE Memo Drill X1 Aft cap as per Dwg D3391 .1875" dia	0.00 0.00	<i>SC/SA</i>	<i>u/l/22</i>		<i>1</i>	<i>0</i>		

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

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N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 11/11/2011 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 25/11/2011 **Req'd Qty:** 1.00 *** 1 ***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

**Insp.
Stamp**

0.00

160

0.00

QC

Memo

Quality Control

0.00

170

0.00

QC

Memo

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Item ID: D3391-021

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Fwd Tube Assembly

Start Date: 11/11/2011 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 25/11/2011 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

180

0.00

180

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size)
(ONLY DRILL HOLES MARKED "A")

2-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

5- open float bag holes 0.328" and counter sink as per dwg D3391

6-Deburr & Scribe Batch number Inside aft end

7-Transfer drill D3391-021 with D3391-023

190

QC5- Inspect part completeness to step on W/O

0.00

190

QC

Memo

0.00

Quality Control

DP 11-11-22

DP 11-12-13

DP 11-12-13

DP 11-12-13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	Chemical Conversion Coat per QS1005 4.1	0.00		11-12-13					
200	HandFinish	0.00							
Hand Finishing	Memo								
210	QC3- Inspect Part Finish	0.00							
210	QC	0.00							
Quality Control	Memo								
220	Skidtubes	0.00							
220	Skidtubes	0.00							
Skidtubes	Memo 1-instal spacers as per dwg D3391 A/R Magnabond 6398 batch: <u>mill 870</u> exp. date: <u>03/2012</u> cure time 12hrs. as per QS1015 2- grind crossbolt flush 3-back drill crossbolt if necessary								
				SAD 11-12-13					

1 0 BE11-12-13



W/O:		WORK ORDER CHANGES					
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 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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230	QC5- Inspect part completeness to step on W/O	0.00							
230									
QC	Memo	0.00							
Quality Control									

235	Pressure Wash per QSI005 4.3	0.00							
235									
HandFinish	Memo	0.00							
Hand Finishing	AND REALODINE AS PER PAR09-043								

240	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
240									
Powdercoat	Memo	0.00							
Powder Coating									

START TIME: 10:00
 OVEN TEMPERATURE: 320°F
 FINISH TIME: 10:30

M119480

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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N900040100

Setup Start ***NS1***

Stop ***NS2***

*** 1 ***

*** 1 ***

Reference:

Run Start *NR1*

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

**Insp.
Stamp**

250

0.00

0.00

255

0.00

**** install D3591-1 spacer as per DSI9364 and wearplate and gasket as per DWG ****

0.00

257

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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 Start Date: 11/11/2011 Start Qty: 1.00 ***1*** Cust Item ID:
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 Reference:

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 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260	Identify as per dwg & Stock Location: <u>u10</u>	0.00	D412-742-043	13	75911	<u>x1</u>	<u>6</u>	<u>11/12/19</u>	
260		0.00							
Packaging	Memo								
Packaging									
280	QC21- Final Inspection - Work Order Release	0.00							<u>11/12/28</u>
280		0.00							
QC	Memo								
Quality Control									

11/12/29
Q

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Picklist Print

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Work Order ID: 76388

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Parent Item: D3391-021

D3391-021

Parent Item Name: Fwd Tube Assembly

Start Date: 11/11/2011

Required Date: 25/11/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP A05.09.13New issue KJ/JLM
 IPP B06.02.10Dwg rev.D ecn 773 EC
 IPP C06.05.02Added inspections EC
 IPP D 07.03.13 rev F dwg EC
 IPP E 07.11.07 revG dwg ecn1053P EC verified by: DD
 IPP Rev:f ECN 1056 07-11-12 DD verified by: EC
 IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC
 IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC
 IPP Rev J 09.02.02 added hardware EC verified by: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D6013-047		Manufactured	No			100	Each	8.0000	1	1			
D6013-047									**			11-11-15	
Skidtube Material													

Location Loc Qty Loc Code

LG 8
 26547 8

D3670-4-200		Manufactured	No			220	Each	104.0000	4	4			
D3670-4-200									**			11-12-12	
SPACER													

Location Loc Qty Loc Code

LG 12
 71850 12
 LG001 92
 72851 92

D3401-041		Manufactured	No			255	Each	1.0000	1	1			
D3401-041									**			1371878 (x1) 11/12/20	
Tow Cap Assembly													

Location Loc Qty Loc Code

FP007 1
 71352 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

Page 2

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Work Order ID: 76388

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Parent Item: D3391-021

D3391-021

Parent Item Name: Fwd Tube Assembly

Start Date: 11/11/2011

Required Date: 25/11/2011

Start Qty: 1.00

Required Qty: 1.00

D3564-13

Manufactured No

255

Each

17.0000

1

1

D3564-13

Wearshoe

D4095.051 11.12.20 @ 1042

**

B 76539 (x1) 11/12/20

Location

Loc Qty

Loc Code

FP001

16

73323

16

FP017

1

71594

1

D3566-13

Manufactured No

255

Each

30.0000

1

1

D3566-13

Gasket

11.12.20 @ 1042

**

N/A

Location

Loc Qty

Loc Code

FP

29

73322

29

FP014

1

68341

1

AN960C10L

NAS1149C0332
R

Purchased

No

255

Each

0.0000

10

10

***AN960C10L ***

washer

**

M119736 (x10) 11/12/20

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Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Picklist Print

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Work Order ID: 76388

76388

Parent Item: D3391-021

D3391-021

Parent Item Name: Fwd Tube Assembly

Start Date: 11/11/2011

Required Date: 25/11/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C4A Purchased No

255 Each 2,163.000 10 10

AN3C4A

BOLT

**

11/12/20

Location

Loc Qty

Loc Code

ST350

2163

117313

2

117688

5

117872

22

118112

16

118451

2

118706

142

118838

974

119328

1000

D3672-1 Manufactured No

255 Each 688.0000 4 4

D3672-1

Phenolic Washer

**

11/12/20

Location

Loc Qty

Loc Code

FP-A

424

52505

0

66821

424

ST074

264

72229

264

AEIS-1032-130 Purchased No

255 Each 0.0000 2 2

AFI S-1032-130

INSERT

**

11/19/30 (x2) 11/12/20

AEIS-1032-225

Purchased No

255 Each 0.0000 10 10

AFI S-1032-225

INSERT

**

11/18/66 (x2) 11/12/20

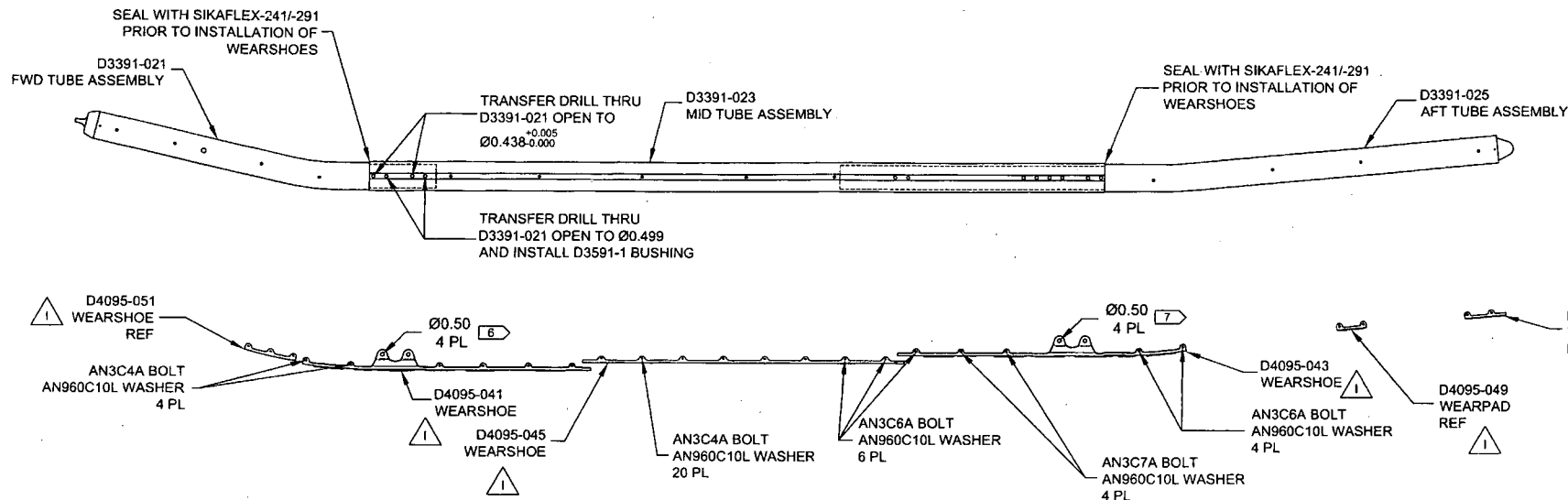
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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D3391-043 ASSEMBLY

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
2	D3591-1	BUSHING
1	D4095-041	WEARSHOE
1	D4095-043	WEARSHOE
1	D4095-045	WEARSHOE
1	D4095-047	WEARSHOE
1	D4095-049	WEARPAD
1	D4095-051	WEARSHOE
24	AN3C4A	BOLT
10	AN3C6A	BOLT
4	AN3C7A	BOLT
38	AN960C10L	WASHER

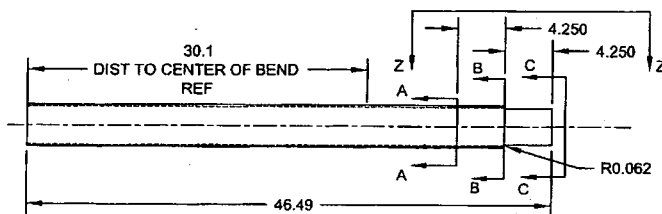
GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON"
- 3) AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 4) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.
- 7) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-041
- 8) FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-043

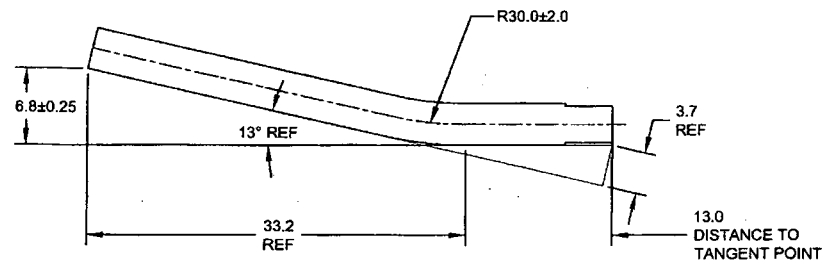
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	XDF	KENT, WA	
CHECKED		DRAWING NO.	REV.
MFG. APPR.		D3391	SHEET 2 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	11.10.13	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.			

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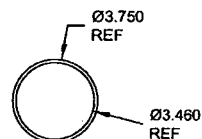
RELEASED
2011-11-04



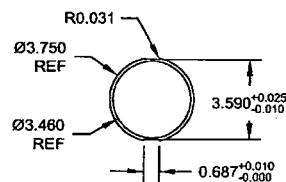
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



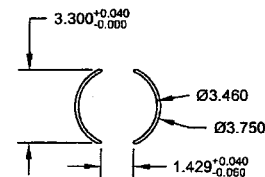
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



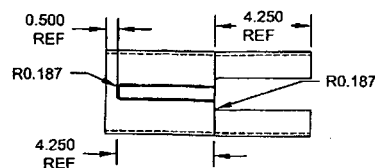
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X

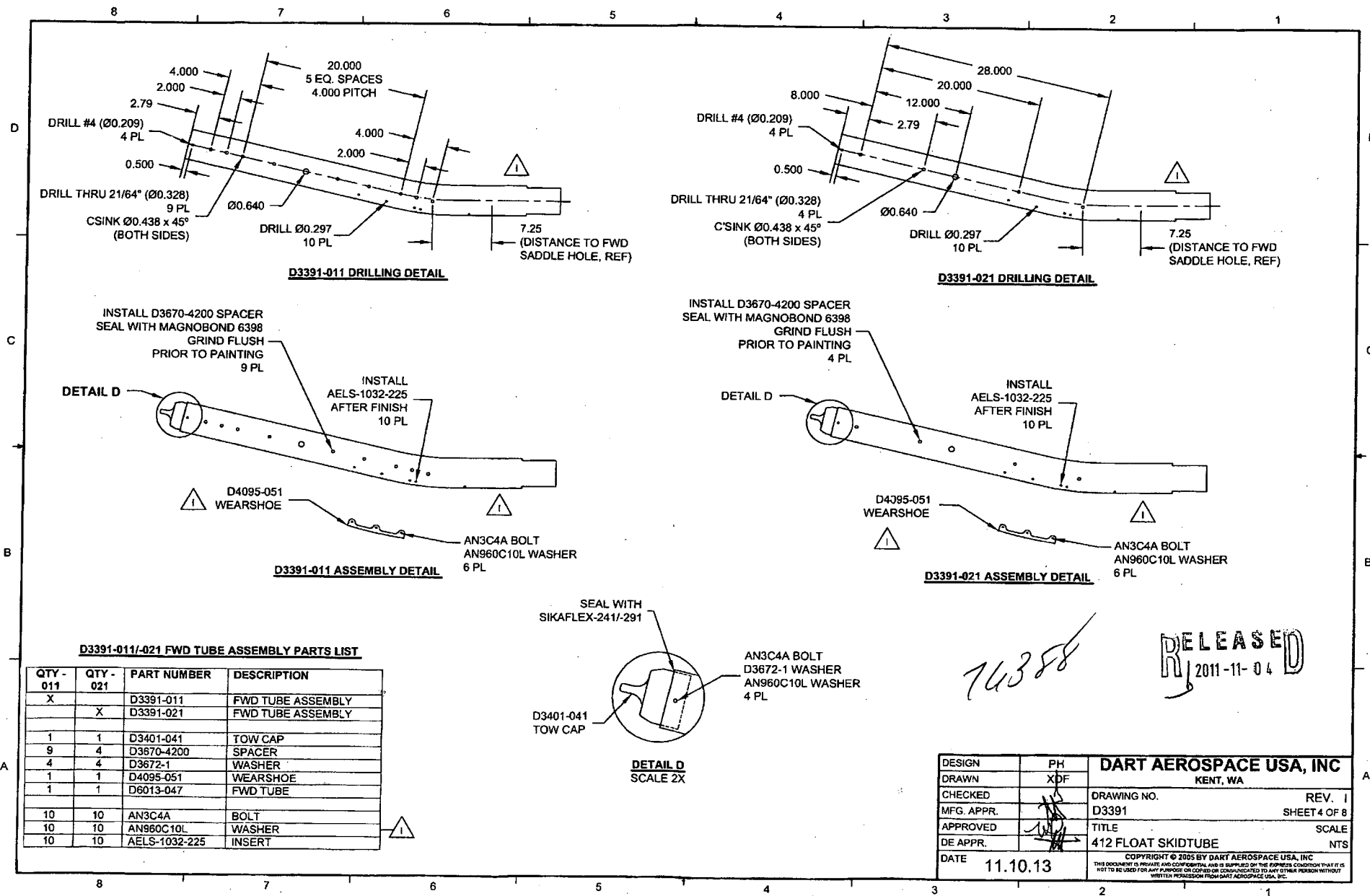


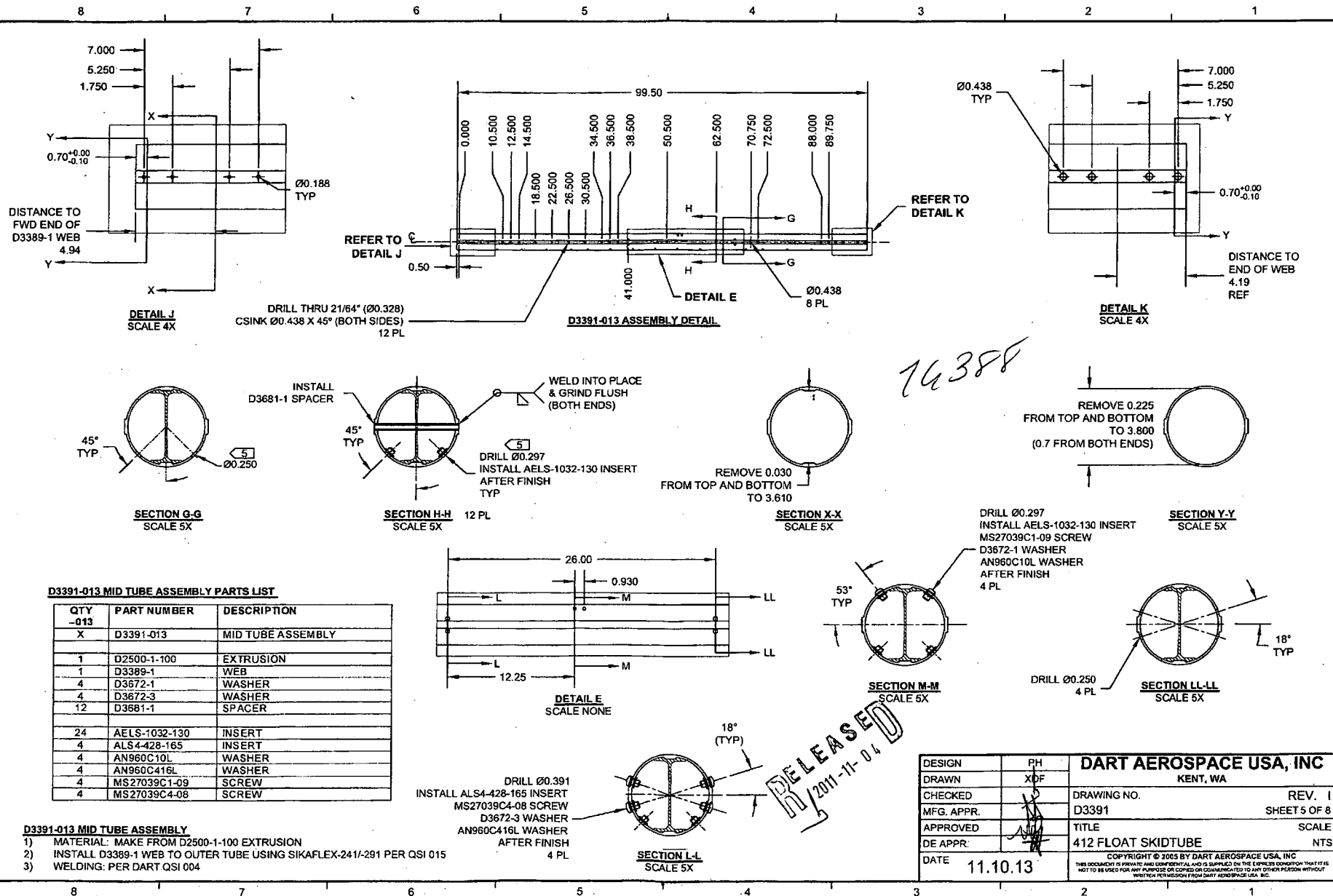
VIEW Z-Z
SCALE 2X

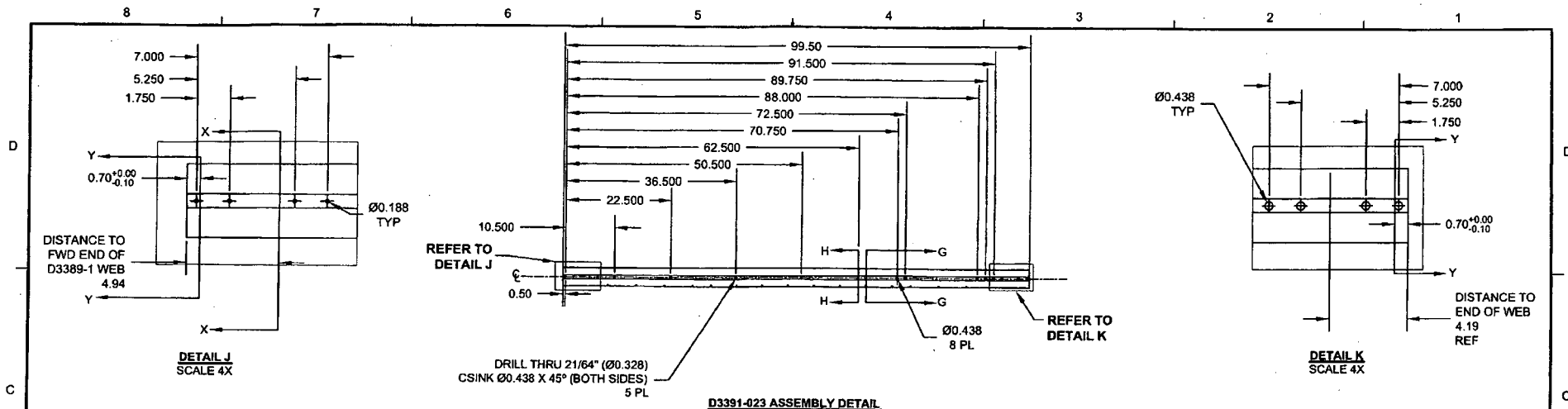
76388

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2011-11-04

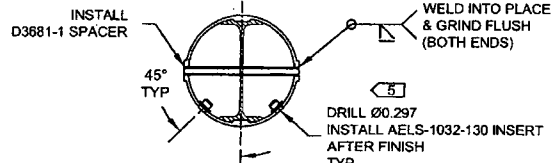
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	XDF	KENT, WA	
CHECKED		DRAWING NO.	REV. 1
MFG. APPR.		D3391	SHEET 3 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	11.10.13	<small>COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	



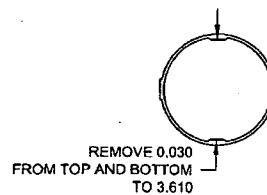




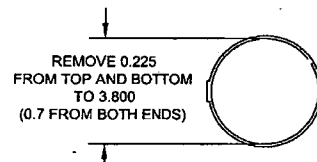
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

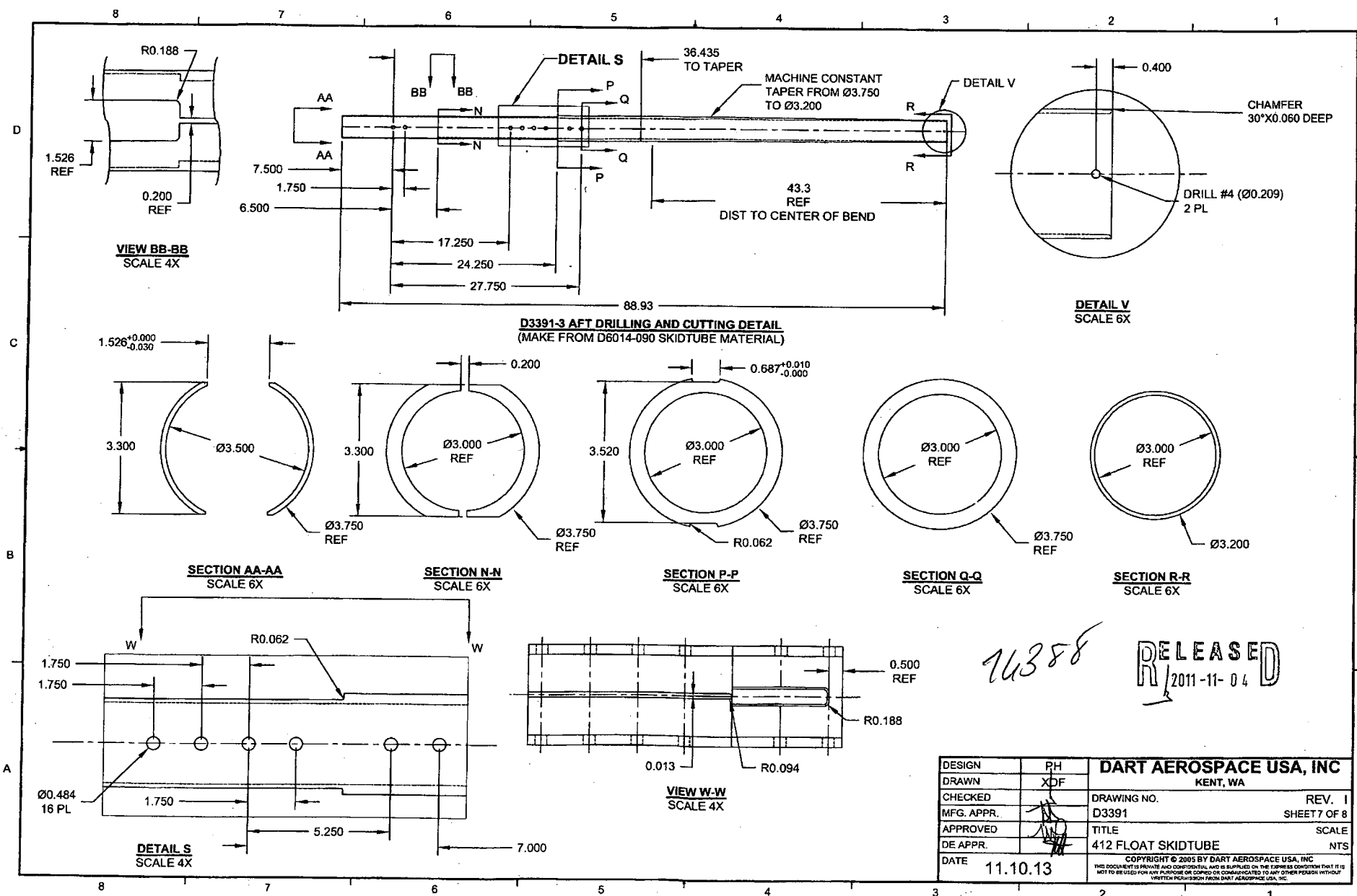
D3391-023 MID TUBE ASSEMBLY

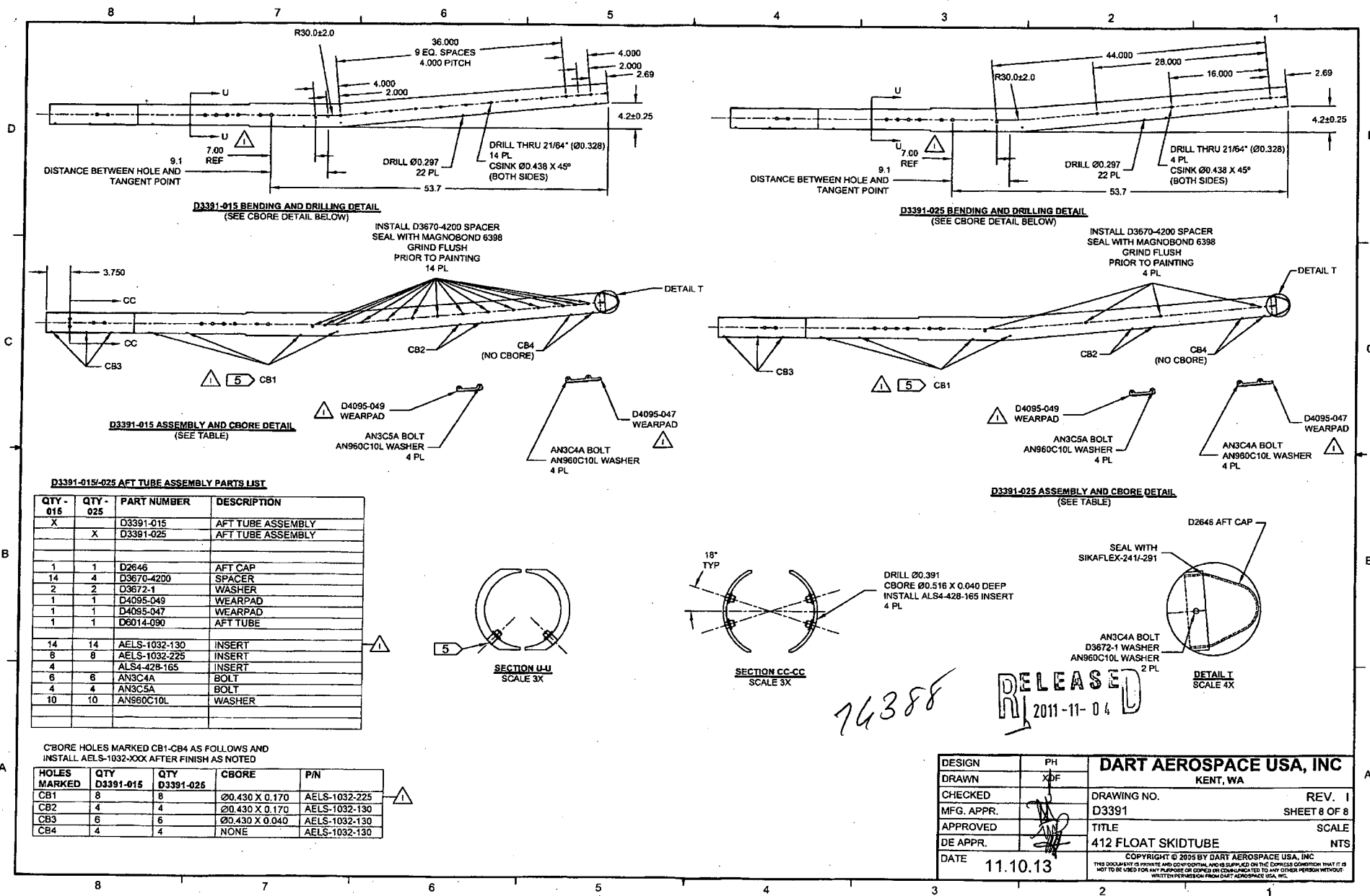
- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
- 3) WELDING: PER DART QSI 004

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DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	XDF	KENT, WA	
CHECKED		DRAWING NO. D3391	REV. 1
MFG. APPR.		SHEET 6 OF 8	
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DE APPR.		412 FLOAT SKIDTUBE	NTS
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11/11/11